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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ROSSI, JESSICA	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 12/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/864,779	TAYLOR ET AL.	
	Examiner	Art Unit	
	Jessica L. Rossi	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 October 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,7,9-17,19,21-24 and 41-53* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,7,9-17,19,21-24,41-44 and 46-53* is/are rejected.

7)☒ Claim(s) *45* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment dated 10/30/03. Claims 2, 4-6, 8, 18, 20, and 25-40 were canceled. Claims 41-53 were added. Claims 1, 3, 7, 9-17, 19, 21-24, and 41-53 are pending.

2. The rejection of claim 24 under 35 U.S.C. 112, second paragraph, as set forth in paragraph 3 of the previous office action, has been withdrawn in light of Applicants arguments.

3. The rejection of claims 17-22 under 35 U.S.C. 102(b) as being anticipated by Hsu et al. (of record), as set forth in paragraph 5 of the previous office action, has been withdrawn in light of the present amendment.

4. The rejection of claims 17-18 and 21-22 under 35 U.S.C. 102(b) as being anticipated by Amosov et al. (of record), as set forth in paragraph 7 of the previous office action, has been withdrawn in light of the present amendment.

5. The rejection of claim 17 under 35 U.S.C. 102(b) as being anticipated by Osgood et al. (of record), as set forth in paragraph 8 of the previous office action, has been withdrawn due to the added limitation of the substrate comprising a non-woven mat of fibers (Osgood teaches the substrates being wood plies).

6. The rejection of claims 1, 9, and 15-16 under 35 U.S.C. 103(a) as being unpatentable over Osgood et al. in view of Rogers (of record) and Giesfeldt et al. (of record), as set forth in paragraph 12 of the previous office action, has been withdrawn due to the added limitation of the substrate comprising a non-woven mat of fibers.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1, 5, 7, 9-17. 19, and 21-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, it is unclear how the adhesive composition can "comprise" (line 4) **and** "consist essentially of" (lines 8-9) hemicellulose and water. The latter is an "open" phrase while the former is a "closed" phrase (see MPEP 2111.03). Do Applicants mean that the adhesive composition comprises hemicellulose and water or do Applicants mean that the adhesive composition consists essentially of hemicellulose and water? Applicants are asked to clarify. It is suggested to delete "comprising hemicellulose and water" in line 4 and replace it with the "consisting essentially of" terminology in lines 8-9.

With respect to claim 17, it recites the limitation "said first substrate" in line 4. There is insufficient antecedent basis for this limitation in the claim. It is suggested to delete "first".

Claim Rejections - 35 USC § 103

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Claims 1, 3, 9, and 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicklin et al. (US 4071651; of record) and Hsu et al. (US 4514532; of record), as set forth in paragraph 13 of the previous office action.

*The following rejections are set forth as though claim 1 was intended to mean that the adhesive composition **comprises** hemicellulose and water.

With respect to claim 1, Hicklin is directed to making a laminate by providing a first fibrous web 41 and a second fibrous web 42, where both webs are impregnated with a liquid adhesive composition comprising hemicellulose and water such that the webs are simultaneously heated and pressed to bond the same along their bonding interface (Figures 2 and 4; abstract; column 3, lines 12-13 and 38-41; column 4, lines 51-53). The skilled artisan would have appreciated that evaporation/dewatering of some or all of the adhesive would take place during heating. Hicklin is silent as to the first fibrous web being a non-woven mat of fibers.

It is known in the art to impregnate a non-woven mat of fibers with an adhesive composition comprising hemicellulose, as taught by Hsu (column 9, lines 8-12). It would have been obvious to use a non-woven mat of fibers for the first fibrous web of Hicklin because such is know in the art, as taught by Hsu, where such a mat has applicability in various industries (i.e. insulation industry).

Regarding claim 3, Hsu teaches the fibers being glass fibers (column 9, lines 8-12).

Regarding claim 9, the skilled artisan would have appreciated that the reference teaches dewatering by heating.

Regarding claims 10-12, Hicklin teaches impregnating the first and second webs prior to contacting them with each other (note that "sizing agent" is also sprayed onto first and second webs at 26 and 27, respectively, before contacting the webs to form laminate 8; Figure 1; column 2, lines 38-45 and 48-49).

Regarding claims 13-14, Hicklin teaches the first and second fibrous, impregnated webs being prepregs.

Regarding claims 15-16, impregnating the webs before or after placing them into contact with each other would have been within purview of the skilled artisan because only the expected results would have been achieved.

11. Claim 7 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Hicklin et al. and Hsu et al. as applied to claim 6 above, and further in view of the Admitted Prior Art in the specification of the present application, as set forth in paragraph 14 of the previous office action.

Regarding claim 7, Hicklin teaches hemicellulose but is silent as to the hemicellulose being derived from an alkaline cooked hemicellulose-containing agricultural residue. The skilled artisan would have appreciated the various ways for deriving hemicellulose and therefore selection of a particular method would have been within purview of the skilled artisan. However, it would have been obvious to derive the hemicellulose of Hicklin from an alkaline cooked hemicellulose-containing agricultural residue because such is known in the art, as taught by the Admitted Prior Art (p. 3, 1st paragraph).

12. Claim 17, 19, 21-23, 41-44, and 46-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicklin et al. in view of Hsu et al. and the Admitted Prior Art in the specification of the present application.

With respect to claim 17, Hicklin is directed to making a prepreg by providing a liquid pregnable fibrous ply 41/42 and impregnating the ply with an adhesive composition comprising hemicellulose and water (note that inner plies 41/42 are impregnated with "sizing agent" that includes adhesive composition comprising hemicellulose and water; abstract; column 4, lines 51-

53; column 3, lines 12-13). Hicklin is silent as to the first fibrous web being a non-woven mat of fibers and the hemicellulose comprising corn hull hemicellulose.

It is known in the art to impregnate a non-woven mat of fibers with an adhesive composition comprising hemicellulose, as taught by Hsu (column 9, lines 8-12). It would have been obvious to use a non-woven mat of fibers for the first fibrous web of Hicklin because such is know in the art, as taught by Hsu, where such a mat has applicability in various industries (i.e. insulation industry).

It is known in the art to use hemicellulose, which comprises corn hull hemicellulose, as an adhesive, as taught by the Admitted Prior Art (p. 3, 1st paragraph). The skilled artisan reading Hicklin as a whole would have appreciated the materials from which the hemicellulose is derived is not critical to the invention; therefore, it would have been obvious to use hemicellulose comprising corn hull for the adhesive of Hicklin because such is known in the art, as taught by the Admitted Prior Art, and such a material is readily available.

Regarding claim 19, Hsu teaches the fibers being glass fibers (column 9, lines 8-12).

Regarding claims 21-22, Hicklin teaches the hemicellulose being a bonding agent and the composition including water (column 3, lines 12-13; column 4, lines 51-53). The reference is silent as to the amount of hemicellulose being present in the adhesive. Selection of a particular amount would have been within purview of the skilled artisan at the time the invention was made. Those skilled in the art would have determined through routine experimentation the desired amount of hemicellulose to achieve the necessary adhesiveness. However, it would have been obvious to use the hemicellulose in an amount of at least 10% or 50% because it is known

in the art to bond wood plies using an adhesive having hemicellulose present in the these amounts, as taught by Hsu (column 2, lines 30-40; column 4, lines 59-60).

Regarding claim 23, Hicklin teaches hemicellulose but is silent as to the hemicellulose being derived from an alkaline cooked hemicellulose-containing agricultural residue. The skilled artisan would have appreciated the various ways for deriving hemicellulose and therefore selection of a particular method would have been within purview of the skilled artisan. However, it would have been obvious to derive the hemicellulose of Hicklin from an alkaline cooked hemicellulose-containing agricultural residue because such is known in the art, as taught by the Admitted Prior Art (p. 3, 1st paragraph).

With respect to claim 41, all the limitations were addressed above with respect to claim 1, except the hemicellulose comprising corn hull hemicellulose. Hicklin is silent as to this limitation.

It is known in the art to use hemicellulose, which comprises corn hull hemicellulose, as an adhesive, as taught by the Admitted Prior Art (p. 3, 1st paragraph). The skilled artisan reading Hicklin as a whole would have appreciated the materials from which the hemicellulose is derived is not critical to the invention; therefore, it would have been obvious to use hemicellulose comprising corn hull for the adhesive of Hicklin because such is known in the art, as taught by the Admitted Prior Art, and such a material is readily available.

Regarding claim 42, Hsu teaches the fibers being glass fibers (column 9, lines 8-12).

Regarding claims 43-44, Hicklin teaches the hemicellulose being a bonding agent and the composition including water (column 3, lines 12-13; column 4, lines 51-53). The reference is silent as to the amount of hemicellulose being present in the adhesive. Selection of a particular

amount would have been within purview of the skilled artisan at the time the invention was made. Those skilled in the art would have determined through routine experimentation the desired amount of hemicellulose to achieve the necessary adhesiveness. However, it would have been obvious to use the hemicellulose in an amount of at least 10% or 50% because it is known in the art to bond wood plies using an adhesive having hemicellulose present in the these amounts, as taught by Hsu (column 2, lines 30-40; column 4, lines 59-60).

Regarding claim 46, the skilled artisan would have appreciated that the reference teaches dewatering by heating.

Regarding claims 47-48, Hicklin teaches impregnating the first and second webs prior to contacting them with each other (note that "sizing agent" is also sprayed onto first and second webs at 26 and 27, respectively, before contacting the webs to form laminate 8; Figure 1; column 2, lines 38-45 and 48-49).

Regarding claims 50-51, Hicklin teaches the first and second fibrous, impregnated webs being prepregs.

Regarding claims 49 and 52-53, impregnating the webs before or after placing them into contact with each other would have been within purview of the skilled artisan because only the expected results would have been achieved.

13. Claims 17, 19, and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayla et al. (US 4587285; of record) in view of Hsu et al. and the Admitted Prior Art in the specification of the present application.

With respect to claim 17, Ayla is directed to a method for making a prepreg by providing a liquid pregnable fibrous web (column 1, lines 9-13) and impregnating the web with an adhesive

composition comprising hemicellulose and water (note that reference refers to adhesive as "aqueous solution", which means that the components are dissolved in water; column 2, lines 57-61; column 3, lines 15-17). Ayla is silent as to the type of fibrous substrate and the hemicellulose comprising corn hull hemicellulose.

It is known in the art to impregnate a non-woven mat of fibers with an adhesive composition comprising hemicellulose, as taught by Hsu (column 9, lines 8-12). It would have been obvious to use a non-woven mat of fibers for the first fibrous web of Ayla because such is know in the art, as taught by Hsu, where such a mat has applicability in various industries (i.e. insulation industry).

It is known in the art to use hemicellulose, which comprises corn hull hemicellulose, as an adhesive, as taught by the Admitted Prior Art (p. 3, 1st paragraph). Since Ayla teaches the hemicellulose being derived from vegetable materials (column 3, line 67 – column 4, line 3), the skilled artisan would have been motivated to use hemicellulose comprising corn hull for the adhesive of Ayla because such is known in the art, as taught by the Admitted Prior Art, and such a material is readily available.

Regarding claims 21-22, Ayla teaches the adhesive composition comprising one or more bonding agents (claim 1) and the hemicellulose being present in an amount of at least 10% and up to 90% (column 2, lines 57-66).

Regarding claim 23, Ayla teaches hemicellulose but is silent as to the hemicellulose being derived from an alkaline cooked hemicellulose-containing agricultural residue. The skilled artisan would have appreciated the various ways for deriving hemicellulose and therefore selection of a particular method would have been within purview of the skilled artisan.

However, it would have been obvious to derive the hemicellulose of Ayla from an alkaline cooked hemicellulose-containing agricultural residue because such is known in the art, as taught by the Admitted Prior Art (p. 3, 1st paragraph).

Allowable Subject Matter

14. Claim 45 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 45, the prior art fails to teach or suggest the adhesive composition consisting essentially of hemicellulose and water. If Applicants intend to put this claim into independent form, please note the 112, 2nd paragraph, rejection set forth in paragraph 8 above.

Response to Arguments

15. Applicant's arguments filed 10/30/03 have been fully considered but they are not persuasive.

16. On page 7 of the arguments, Applicants argue Hsu does not teach or suggest the adhesive composition consisting essentially of hemicellulose and water and/or the hemicellulose comprising corn hull hemicellulose.

The examiner points out that Hsu was only used to show it is known in the art to impregnate a non-woven mat of fibers with a hemicellulose adhesive composition.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jessica L. Rossi** whose telephone number is **703-305-5419 (571-272-1223 come mid December)**. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard D. Crispino can be reached on 703-308-3853. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jessica L. Rossi
Patent Examiner
Art Unit 1733

JEFF H. AFTERGUT
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GROUP 1300